

CLAIMS

1. A method for producing a stitch-bonded material web by means of hydrodynamic needling, characterized in that a material web consisting at least partly of metal fibers or metal filaments is stitch-bonded and/or finished by means of high-energy water jets to form a material web ready to use such as cloth or the like.

2. The method according to claim 1, characterized in that the material web is formed as woven fabric at least partly avoiding yarn formation from unspun metal fibers and such a material web is exposed to this hydrodynamic needling for finishing.

3. The method according to claim 1, characterized in that the material web is formed as woven fabric or knitted fabric at least partly using spun yarns of metal fibers and such a material web is exposed to this hydrodynamic needling for finishing.

4. The method according to any one of the preceding claims, characterized in that textile fibers are mixed in the material web of metal fibers or filaments and both are together exposed to the hydrodynamic needling for stitch bonding or finishing.

5. The method according to any one of the preceding claims, characterized in that the material web consists of 100% metal fibers or filaments and such a material web is exposed to the hydrodynamic needling for stitch bonding or finishing.

5 6. The method according to any one of the preceding claims, characterized in that the hydrodynamic needling is carried out at a pressure >200 bar.

10 7. The method according to any one of the preceding claims, characterized in that a woven fabric, knit fabric, knitted fabric, stitch-bonded materials, stitch-bonded nonwoven, needle-punched nonwoven as material web manufactured at least partly of metal fibers or filaments are subjected to a water jet treatment to modify properties such as, for example, post-stitch bonding, density variation, smoothing, roughening etc.

15 8. The method according to any one of the preceding claims, characterized in that metal fibre nonwovens with woven fabrics, knit fabrics, knitted fabrics, stitch-bonded materials, stitch-bonded nonwovens, needle-punched nonwovens etc. consisting of 100% metal fibers but also of combinations of metal fibers and
20 textile fibers are combined to form composites by means of hydrodynamic needling.

9. The method according to any one of the preceding claims, characterized in that the water jet stitch bonding is followed by a pressing and/or calibration process.

5 10. A nonwoven characterized in that it consists at least partly of unspun metal fibers or filaments and is treated by means of hydrodynamic needling for stitch bonding.

11. The nonwoven according to claim 1, characterized in that it consists of 100% unspun metal fibers or filaments and is treated by means of hydrodynamic needling for stitch bonding.

10 12. The spunlace nonwoven according to claim 10 or 11, characterized in that the metal fibers or filaments are interlaced, entangled or hooked with one another or into one another without forming meshes.

15 13. A spunlace nonwoven of metal fibers according to any one of claims 10 to 12, characterized in that the fibers to be stitch-bonded consist of a homogeneous mixture of metal fibers and textile fibers.

20 14. The spunlace nonwoven of metal fibers according to claim 10 to 13, characterized in that the fibers to be stitch-bonded are a component of laminated nonwovens wherein the laminated nonwovens are composed of two or more layers.

15. The spunlace nonwoven of metal fibers according to claim 14, characterized in that the layers consist of metal fibers or textile fibers or in turn of homogeneous mixtures of metal fibers and textile fibers.

5 16. The spunlace nonwoven according to claim 10 to 15, characterized in that no filamentous material is present.

17. The spunlace nonwoven according to claim 10 to 15, characterized in that thread material is additionally worked in.

10 18. The spunlace nonwoven according to claim 10 to 17, characterized in that additional fabrics such as, for example, knitted fabric, knit fabric, needle-punched nonwoven etc. consisting of metallic materials or textile fibrous substances are worked in or attached laterally.

15 19. The spunlace nonwoven according to claim 10 to 18, characterized in that the pore volume, the pore size and the thickness is also varied by a pressing and/or calibrating process following the water jet stitch bonding.

20 20. The spunlace nonwoven according to claim 10 to 19, characterized in that it has perforations as required according to a pattern.

21. Woven fabric, knit fabric, knitted fabric, stitch-bonded materials, stitch-bonded nonwoven, needle-punched nonwoven etc., characterized in that a modification of properties such as, for example, post-stitch bonding, density variation, smoothing, roughening etc. has occurred as a result of an aftertreatment with high-energy water jets.

22. Composites characterized in that metal fibre nonwovens are combined with woven fabrics, knit fabric, knitted fabrics, stitch-bonded materials, stitch-bonded nonwovens and/or needle-punched nonwoven etc. made of metal fibers or metal filaments in various combinations by means of hydrodynamic needling to form a composite.